ALSO BY FRANS DE WAAL

Primates and Philosophers (2006)

Our Inner Ape (2005)

My Family Album (2003)

The Ape and the Sushi Master (2001)

Bonobo (1997)

Good Natured (1996)

Peacemaking among Primates (1989)

Chimpanzee Politics (1982)

The Age of Empathy

NATURE'S LESSONS FOR A KINDER SOCIETY

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With drawings by the author



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down the heart, which was the first such demonstration for any animal in a naturalistic setting. It confirmed the widely held assumption that grooming is an enjoyable, calming activity that serves not only to remove lice and ticks, but also to eliminate stress and foster social ties. Drops in heart rate have also been found in horses being petted by humans, and conversely, in humans petting their pets. In fact, animal companions are so effective against stress that they are increasingly recommended for heart patients.

I'll need to think of this the next time our cat, Sofie, wakes me up by tapping my face—ever so gently, but also ever so persistently—so she can slip under the covers.

In the winter, that is.

Empathy Needs a Face

During our heart rate study, Stephanie must have caught the empathy bug. After she'd gone on to study elsewhere, she decided to read more widely on the topic. The empathy literature is completely human-centered, never mentioning animals, as if a capacity so visceral and pervasive and showing up so early in life, could be anything other than biological. Empathy is still often presented as a voluntary process, requiring role-taking and higher cognition, even language. Stephanie and I wanted to go over the existing data from a different angle.

When I visited her years later in Berkeley, California, Stephanie dragged two large cardboard boxes from the corner of her office and put them on the table. I saw more articles on empathy than I had ever dreamed existed, neatly organized by topic, including historical papers, such as those by Theodor Lipps. Evidently, our review project had been growing larger and larger. The focus was on how empathy works, especially how the brain connects the outside world with the inside. The sight of another person's state awakens within us hidden memories of similar states that we've experienced. I don't mean conscious memories, but an automatic reactivation of neural circuits. Seeing someone in pain activates pain circuits to the point that we

clench our jaws, close our eyes, and even yell "Aw!" if we see a child scrape its knee. Our behavior fits the other's situation, because it has become ours.

The discovery of *mirror neurons* boosts this whole argument at the cellular level. In 1992, an Italian team at the University of Parma first reported that monkeys possess special brain cells that fire not only when the monkey itself reaches for an object, but also when it sees another do so. In a typical demonstration, a computer screen shows the firing of a cell as recorded by electrodes in a monkey's brain. If the monkey takes a peanut from the experimenter's hand, the neuron gives a brief signal burst that (through an amplifier) sounds like a machine gun. When, a little later, the experimenter picks up a peanut while being watched by the monkey, the very same cell fires again. This time, however, it responds to *someone else's* action. What makes these neurons special is the lack of distinction between "monkey see" and "monkey do." They erase the line between self and other, and offer a first hint of how the brain helps an organism mirror the emotions and behavior of those around it. It's like a Pink Floyd song of long ago that draws attention to eye contact between people: "I am you and what I see is me." The discovery of mirror neurons has been hailed as being of the same monumental importance to psychology as the discovery of DNA has been for biology. That this key discovery took place in monkeys has obviously not helped claims of empathy as uniquely human.

The automaticity of empathy has become a point of debate, though. For the same reason that Dimberg ran into resistance showing unconscious facial mimicry, some scientists profoundly dislike any talk of automaticity, which they equate with "beyond control." We can't afford automatic reactions, they say. If we were to empathize with everybody in sight, we'd be in constant emotional turmoil. I'd be the last to disagree, but is this really what "automaticity" means? It refers to the speed and subconscious nature of a process, not the inability to override it. My breathing, for instance, is fully automated, yet I remain in charge. This very minute, I can decide to stop breathing until I see purple.

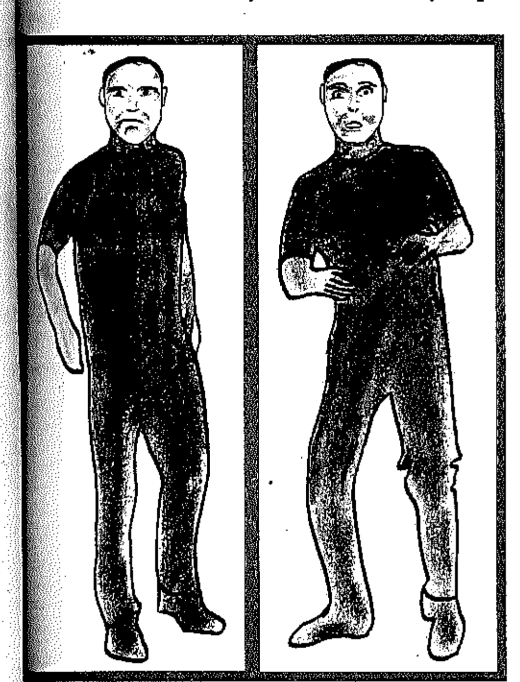
The ability to control and inhibit responses is not our only weapon against rampant empathy. We also regulate it at its very source by means of selective attention and identification. If you don't want to be aroused by an image, just don't look at it. And even though we identify easily with others, we don't do so automatically. For example, we have a hard time identifying with people whom we see as different or belonging to another group. We find it easier to identify with those like us—with the same cultural background, ethnic features, age, gender, job, and so on—and even more so with those close to us, such as spouses, children, and friends. Identification is such a basic precondition for empathy that even mice show pain contagion only with their cage mates.

If identification with others opens the door for empathy, the absence of identification closes that door. Since wild chimps occasionally kill one another, they must be capable of shutting the door completely. This takes place mostly when groups compete, which is of course also the situation in which humans run lowest on empathy. In one African reserve, a community of chimpanzees split into a northern and southern faction, eventually becoming two separate communities. These chimpanzees had played and groomed together, reconciled after squabbles, shared meat, and lived in harmony. But the factions began to fight over territory nonetheless. Shocked researchers watched as former friends literally drank one another's blood. Not even the oldest community members were exempt: An extremely frail-looking male was pummeled for twenty minutes, dragged about, and left for dead. This is why victims of chimpanzee warfare have been called "dechimpized," suggesting the same suppression of identification that marks dehumanization.

Empathy can also be nipped in the bud. Doctors and nurses in emergency rooms, for example, just cannot afford to be constantly in an empathic mode. They have to put a lid on it. There is a grisly side to this, such as the stories of Nazis who were quite sentimental about their own families, taking care of them as any normal father would, yet at the same time they had lamp shades made out of human skin and they exterminated masses of innocents. Or take Maximilien

Robespierre, the French revolutionary leader who rarely thought twice about sending "enemies of the Republic" to the guillotine—some of them former friends—yet loved to play with his dog, Brount, his sole companion on long walks. People who are perfectly attached and sensitive in one context may act like monsters in another.

But even if empathy is hardly inevitable, it is automatically aroused with those who have been "preapproved" based on similarity or closeness. With them, we can't help resonating. We often focus on the face, but obviously the entire body expresses emotions. As shown by Belgian neuroscientist Beatrice de Gelder, we react as rapidly to body postures as we do to facial expressions. We effortlessly read bodies, such as a fearful pose (ready to run, hands warding off danger) or an angry one (chest out, taking a step forward). When scientists played a trick on their subjects by pasting an angry face on the picture of a fearful body and a fearful face on an angry body, the incongruity slowed down reaction time. But the body posture won out when subjects were asked to judge the emotional state of the depicted person. Apparently, we trust postures more than facial expressions.



We show rapid reactions to angry (left) and fearful (right) body postures. In this drawing, the faces convey the same emotions as the bodies, but with the faces blacked out, we still show an emotional reaction purely based on posture.

How exactly the emotions of others affect our own is not entirely understood. One idea, which I'll call the "Body First Theory," holds that it starts with the body and that emotions follow. Someone else's body language affects our own body, which then creates an emotional echo that makes us feel accordingly. As Louis Armstrong sang, "When you're smiling, the whole world

smiles with you." If copying another's smile makes us feel happy, the emotion of the smiler has been transmitted via our body. Strange as it may sound, this theory states that emotions arise from our bodies. For example, our mood can be improved by simply lifting up the corners of our mouth. If people are asked to bite down on a pencil lengthwise, taking care not to let the pencil touch their lips (thus forcing the mouth into a smile-like shape), they judge cartoons funnier than if they have been asked to frown. The primacy of the body is sometimes summarized in the phrase "I must be afraid, because I'm running."

This surely seems an odd way of putting things: Emotions are supposed to move us, not the other way around. Shouldn't it rather be "I run, because I'm afraid"? After all, "emotion" means to "stir" or "move." This is, in fact, the second idea, which I'll call the "Emotion First Theory." From seeing someone's body language or hearing their tone of voice, we deduce their emotional state, which then affects our own. In fact, we don't need to see their face to adopt the same facial expression, as has been demonstrated by letting humans watch pictures of fearful body postures with the faces blacked out. While this ruled out facial mimicry, the subjects' faces still registered fear. Emotional contagion thus relies on a direct channel between the other's and our own emotions.

There are times when matching the other's emotions is *not* a good idea. When we're facing a furious boss, for example, we'd get into deep trouble if we were to mimic his attitude. What we need is a quick grasp of his emotional state so as to respond with the appropriate submission, appeasement, or remorse. This applies almost equally to situations where the boss is right as where he is wrong. It's just a matter of social rank—a dynamic intuitively understood by every primate. The Emotion First Theory explains such encounters much better than the Body First Theory.

Despite the importance of body postures and movements, the face remains the emotion highway: It offers the quickest connection to the other. Our dependence on this highway may explain why

people with immobile or paralyzed faces feel deeply alone, and tend to become depressive, sometimes to the point of suicide. Working with Parkinson's patients, a speech therapist noted that if in a group of, say, forty patients, five showed facial rigidity, all others would stay away from them. If they talked with them at all, it was to get simple "yes" or "no" answers. And if they wanted to know how they felt, they would rather speak with the companions of these patients. If empathy were a voluntary, conscious process of one mind trying to understand another, there would of course be no reason for this. People would simply need to put in a little more effort to hear the thoughts and feelings of these patients, who are perfectly capable of expressing themselves.

But empathy needs a face. With impoverished facial expression comes impoverished empathic understanding, and a bland interaction devoid of the bodily echoing that humans constantly engage in. As French philosopher Maurice Merleau-Ponty put it, "I live in the facial expression of the other, as I feel him living in mine." When we try to talk to a stone-faced person, we fall into an emotional black hole.

This is precisely the term used by a Frenchwoman who lost her face to a dog attack (her face had become nothing but a *grand trou*, she said, a "big hole"). In 2007, doctors gave her a new face, and her relief says it all: "I have returned to the planet of human beings. Those who have a face, a smile, facial expressions that permit them to communicate."